

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 40-49, 51-53, 56-57, 60-64 and 71-76 and 78-82 are in the case.

I. THE INTERVIEW

At the outset, the undersigned wishes to acknowledge the interview held with the Examiner (Mr. Figueoa) on August 27, 2010. The substance of the interview is correctly reflected in the Interview Summary mailed with the outstanding Action. No agreement was reached.

II. AMENDMENTS TO THE CLAIMS

Claim 40 has been amended by adding the step of displacing the drilling fluid with a fluid comprising one or more polymer breakers prior to the final step of allowing the solid polymer to hydrolyze. Support for the introduction of this new intervening step (c) is provided at page 12, lines 11 to 13 which includes the following wording: "... one or more polymer breakers will be introduced into the wellbore in the solids free fluid which is used to displace the drilling fluid." In addition, page 8, lines 12 to 14 reads as follows: "The polymer breaker may be introduced into the drilling fluid and/or into the solid polymer itself *but will preferably be introduced* into the solids free fluid introduced into the wellbore to displace the drilling fluid." (italics added).

Claim 75, a second independent claim, has been amended by incorporating the process step of former claim 77. Thus, the claim now additionally requires the process to comprise displacing the drilling fluid with a fluid comprising a conventional filter cake

disrupting agent other than a polymer breaker. Claim 77 has been cancelled without prejudice as a consequence of this change, and the dependency of claim 78 has been modified as appropriate.

New dependent claim 80 has been added, specifying that one or more conventional filter cake disrupting agents other than polymer breakers are used. Support for this claim is provided at page 12, lines 18 to 20.

New dependent claim 81 has been introduced, which specifies that each conventional filter cake disruption agent recited in new claim 80 is selected from the specific list of agents mentioned at page 12, lines 20 to 22. New dependent claim 82 has also been added, which specifies that the conventional filter cake disrupting agents are included in the fluid used to displace the drilling fluid. Support for this claim is provided at page 12, lines 22 to 24. No new matter is entered by these amendments.

III. EXAMINER'S RESPONSE TO AMENDMENT

The Examiner is thanked for withdrawing the previous obviousness-type double patenting rejection in view of Applicants' terminal disclaimer submitted in response to the previous Office Action. The Examiner is thanked for withdrawing the 35 U.S.C. §103(a) rejection of certain claims over WO 2000/57022 (Harris) in view of US 7,265,079 (Willberg'079) or US 2004/0094300A1 (Sullivan).

IV. ELECTION/RESTRICTIONS

Applicant notes that claim 40 to 49, 51 to 53, 56, 57, 60 to 64 and 71 to 79 were examined in the instant Action.

V. THE ANTICIPATION REJECTION

Claims 40 to 49, 56, 57, 61 to 64 and 71 to 79 stand rejected under 35 U.S.C. §102(e) as allegedly anticipated by Willberg'079. In response, and without conceding to the rejection, independent claims 40 and 75 have been amended to further distinguish over this reference.

In claim 40 as now amended, the process includes, as step (c), the displacement of drilling fluid with a fluid comprising one or more polymer breakers. As a consequence of the introduction of that intervening step, the final step (now labeled (d)) involves allowing solid polymer to hydrolyze in the presence of not only water but also the polymer breaker. Thus, disruption of the filter cake is now due to a combination of dissolution of solid polymer and the action of a polymer breaker.

Willberg'079 contains no disclosure of such a process as defined in amended claim 40. This is particularly because there is no disclosure of disrupting filter cake using a combination of polymer breaker and hydrolysis of solid polymer (to generate acid which, in turn, disrupts the filter cake).

First, Willberg'079 states that the interaction of additional fluids is not required: "The composition is used in oil field treatments such as drilling, completion and stimulation where it disappears without the use of mechanical means or injection of additional fluids"(see last line of the abstract).

Secondly, Willberg'079 expressly states that "... the acid generated in the self-destruction process may function as a breaker for polymeric or viscoelastic surfactant viscosifying agent" (column 7, lines 1 to 10). The document further states that "... acids

are known to damage or destroy synthetic polymers and biopolymers used to viscosify drilling completion and stimulation fluid”.

Although acids alone might in practice be capable of fully hydrolyzing (i.e., breaking) polymeric viscosifying agents, the compositions taught by Willberg'079 contain, in addition to a solid acid-precursor, an acid-reactive material such as calcium carbonate. In such compositions the acid produced from hydrolysis of the solid acid precursor (normally lactic acid) will immediately react with the acid-reactive material to produce a salt (normally calcium lactate). This system will therefore have a rather higher pH than one containing acid alone and will not therefore be sufficient to fully hydrolyze polymeric materials. It is generally acknowledged in the industry, however, that it is appropriate to include specific polymer-breaking agents (such as enzymes or oxidizing agents) in filter cake disruption systems.

The Examples of Willberg'079 further reinforce the fact that no additional fluids beyond the fluid comprising a solid acid precursor is used and that no process falling within the claims as now amended is disclosed. Thus, Example 1 entails the use of a lactate polymer alone to generate lactic acid in order to dissolve calcium carbonate. Example 2 describes experiments using polylactic acid (available as a commercial resin comprising a polymerized mixture of D-L-lactic acid) both with and without calcite. Example 3 describes experiments, which were designed to determine the suitability of certain materials as fluid loss additives. Each experimental “run” involved the use of polyglycolic acid, in the form of a commercial crystalline material, mixed with magnesium oxide, calcium carbonate or aluminium hydroxide.

In summary, Willberg'079 fails to disclose (or suggest) a process as now defined in amended claim 40, involving the use of both a fluid comprising one or more polymer breakers and a drilling fluid which comprises a solid polymer that generates organic acids upon hydrolysis. Claim 40 as amended is clearly not anticipated by Willberg'079.

Claim 75 prior to amendment already required the use of two fluids in the claimed process: these are the drilling fluid comprising solid polymer, which is allowed to hydrolyze in step (c) to generate acid and thereby disrupt the filter cake, and the fluid comprising a polymer breaker which is introduced in step (d) to displace the drilling fluid. However, claim 75 now specifies in addition that a fluid comprising a conventional filter cake disruption agent other than a polymer breaker is used to displace the drilling fluid. As noted above, this process step was previously recited in dependent claim 77 (now cancelled). The newly-introduced step can take place at any point in the sequence of process steps. However, regardless of the particular point at which it is conducted, this additional step contributes towards distinguishing claim 75 from the disclosure of Willberg'079.

Nothing disclosed in Willberg'079 resembles a process as now defined in amended claim 75, requiring the use of a drilling fluid comprising a solid polymer, a fluid comprising a polymer breaker and a fluid comprising a conventional filter cake disrupting agent other than a polymer breaker. Accordingly, claim 75 is not anticipated by Willberg'079.

In view of the amendments and arguments submitted herewith, the anticipation rejection over Willberg'079 should be withdrawn. Such action is respectfully requested.

VI. THE OBVIOUSNESS REJECTION

Claims 40 to 49, 51-53, 56, 57, 60 to 64 and 71 to 79 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Willberg'079 in view of Crews. Whilst acknowledging that Willberg'079 does not expressly teach the use of hydrolase enzyme as a breaker, the Action argues that Crews teaches the use of enzymes to reduce the viscosity of viscosified oilfield fluids. As a consequence, the Action argues that it would have been obvious to include a polymer breaker such as a hydrolase enzyme in the VES fluid compositions that form filter cake in the process disclosed in Willberg'079. The rejection is respectfully traversed.

In response, and without conceding to the rejection, with the amendments presented to the two independent claims, the obviousness rejection has been obviated. In particular, the introduction of a new process step in each claim serves to distinguish still further the process as claimed from the disclosure of Willberg'079. As demonstrated above, Willberg'079 fails to disclose or suggest a process comprising each of the process steps now recited in claims 40 and 75.

Crews fails to remedy these deficiencies in the disclosure of Willberg'079. Thus, Crews fails to disclose or suggest processes for disrupting filter cake in which an additional fluid is used comprising at least one polymer breaker in addition to the solid polymer which hydrolyzes to disrupt filter cake (claim 40), or the use of a drilling fluid which comprises a conventional filter cake disrupting agent in combination with a fluid comprising a polymer breaker and drilling fluid comprising solid polymer which hydrolyzes (claim 75). It is therefore irrelevant that Crews discloses the use of hydrolase enzymes and/or bacteria as polymer breakers in oilfield fluids.

A combination of Crews and Willberg'079 fails to lead to a process falling within the scope of the amended claims. Withdrawal of the obviousness rejection over Willberg'079 in view of Crews is respectfully requested.

Favorable action is awaited.

Respectfully submitted,

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